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TESTS PROVE THAT THE "PRISTINE BULLET" DOES NOT SUPPORT A JFK ASSASSINATION CONSPIRACY

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ABSTRACT

PURPOSE -- To show that a 6.5mm full metal jacketed (FMJ) Mannlicher-Carcano bullet, traveling at the approximate speed (1000-1100 ft/s) it would have possessed after perforating the junction of the neck and torso of one adult human, and the chest of another, would perforate a human radius bone just above the wrist without becoming deformed.
METHOD -- Bullet velocities were measured while lowering powder charges until the appropriate powder charge was obtained. Cadaver forearms were then shot at this lowered velocity and bullets were caught in a bullet trap.
RESULTS -- One bullet traveling at 1108 ft/s and one at 1335 ft/s perforated cadaver radius bones and were caught in the bullet trap. Neither bullet had any deformation whatsoever, except for rifling impressions.
CONCLUSIONS -- The FMJ Italian military 6.5mm Mannlicher-Carcano bullets perforated cadaver radius bones traveling at (or slightly higher than) the approximate velocity they would have had when striking Governor Connally's wrist and remained truly "pristine" undeformed bullets.

INTRODUCTION

In early 1992, I received a call from John Kecker, a San Francisco attorney with whom I had become acquainted socially while I was Director of the Wound Ballistics Laboratory at the Letterman Army Institute of Research on the Presidio of San Francisco. He asked if I would consider testifying as a witness for the prosecution in a moot trial "People v. Lee Harvey Oswald" to be put on by the American Bar Association (ABA) at their annual meeting in San Francisco in August 1992. He stated that Failure Analysis Associates of Menlo Park, CA, had agreed to work on the case and to provide resources for me to do, in collaboration with them, any experiments I felt indicated in preparing for the case. I agreed to work on the case when I found out that these resources included cadaver forearms so that we could do an experiment that I had thought for many years would be a useful confirmation of the work done by Dr. John Lattimer[1]: shooting the FMJ 6.5mm Mannlicher-Carcano bullet through the distal radius bone of a cadaver forearm at the approximate velocity it would possess after first passing through the junction of President Kennedy's neck and his torso and through the chest Governor Connally.

The reason for this experiment was to disprove the assertion by one of the foremost "conspiracy theorists," that a full metal jacketed bullet could not have passed through Governor Connally's distal radius without becoming more deformed than the recovered bullet[2]. This "conspiracy theorist" claimed that the US Government's own studies proved that the Carcano FMJ bullet would be deformed by perforating the distal end of a radius bone, referring to studies done at Edgewood Arsenal in which a 6.5mm FMJ Carcano bullet was shot through a cadaver forearm, just above the wrist, at the distance Governor Connally was from Oswald's rifle when he was hit. This shot was made directly into the wrist without any intervening target and was considerably deformed in the process. The "conspiracy theorist" apparently did not recognize, however, that the deformation of the Edgewood bullet confirms that the relatively undeformed (so called "pristine") bullet that perforated Governor Connally's wrist had to be traveling considerably slower than if it would have been a direct shot. The only rational explanation for this velocity loss was that it had to have passed through something prior to striking Governor Connally's wrist. This was presented by the persons at Edgewood Arsenal

who did the study as proof that the so called "pristine" bullet in question passed through the torsos of both President Kennedy and Governor Connally before striking the wrist.

METHODS

We set up each cadaver forearm, palm down, on a plywood board that we could fix at an angle and reproduce the approximate downward angle of Oswald's bullet fired from the sixth floor of the Texas School Book Depository building striking President Kennedy and Governor Connally at a distance of about 190 feet.

We shot at a distance of ten feet, through the three "skyscreens" of an Oehler Model 35P Chronograph, and caught (or attempted to catch) the bullets in large cardboard boxes filled with sawdust.*

I removed the Italian military 6.5mm Mannlicher-Carcano bullets with an inertia bullet puller, measured the powder charge, reduced it systematically using a Redding powder scales and reloaded the bullets with a hybrid reloading tool I had rigged for the purpose. After we got velocity we were seeking, 1000-1100 ft/s, we did the shooting into the cadaver wrists.

We used Italian military 6.5mm Mannlicher-Carcano bullets, the same ones I had used previously to develop the wound profile of this bullet (Fig. 1), but not the one used by Lee Harvey Oswald. In all of Dr. Lattimer's experiments he used the same kind of 6.5mm Mannlicher-Carcano bullets made by the Western Cartridge Company that Oswald had used.

RESULTS

The bullets from two "good" hits in the forearm curved in the sawdust and were lost when they exited the side of the boxes. We did, however, obtain two hits through the cadaver radius, near the wrist, about an inch from its end (confirmed by x-ray), in which the bullets were caught in the sawdust: one at a velocity of 1108 ft/s and the other at 1335 ft/s. Both of these bullets were found to be absolutely undeformed (truly "pristine") except for the rifling marks.

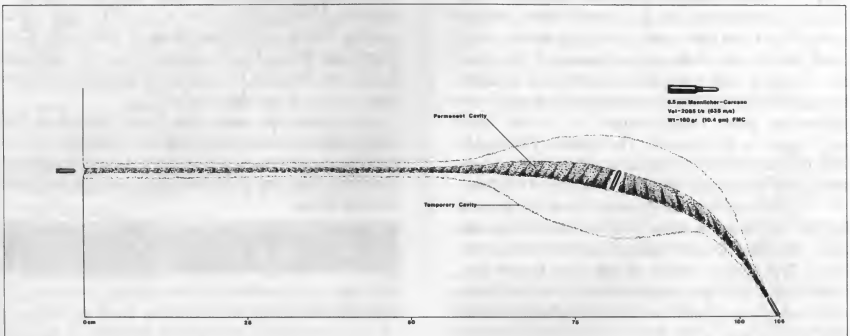

Figure 1.
Wound profile created by the 6.5 Mannlicher-Carcano full metal jacketed bullet. This bullet does not deform, and penetrates an average of 61 cm in tissue, before beginning to yaw: this accounts for its very deep penetration. Had this wound profile been available at the time of the investigation into the JFK assassination it should have allayed any doubt about the capacity of a single 6.5mm bullet to have passed through the junction of President Kennedy's neck and his torso, then continue through the chest of Governor Connally, then pass through Governor Connally's wrist (including the distal radius) before penetrating his thigh.

DISCUSSION AND CONCLUSIONS

Our purpose was to prove the fallacy in the claim of the "conspiracy theorists" that the human radius near its end could not be perforated by a FMJ bullet without causing that bullet to be deformed. Our results show clearly the fallacy in this claim. Our purpose was not to reproduce the shot which hit both JFK and Governor Connally: to do that we would have had to shoot the bullet backwards, since this bullet turns over during tissue penetration, as shown in its wound profile (Fig. 1), and as it did while traversing the chest of Governor Connally, thus striking his wrist traveling base forward[1].

To estimate the striking velocity of the 6.5mm Carcano bullet as it struck Governor Connally's wrist, I took into account the amount of velocity the bullet lost in the air before it reached President Kennedy, the length of tissue travel in both JFK and Governor Connally, and the density and toughness of the tissues perforated. I then consulted several wound ballistics papers which reported velocity losses of various bullets after perforating measured lengths of various parts of living anesthetized animals. Since none of these reported animal shots had been made with long, stable, round nosed bullets such as the 6.5mm Carcano, I completed my averaging and interpolations using the ballistics formula to determine projectile retardation coupled with information about factors assigned to various bullet nose shapes in that formula. The estimate I arrived at was 1000 to 1100 ft/s. I would not argue with any estimate that was outside these limits by up to ±150 ft/s.

The thickness of the outer (cortical) layer in human long bones is thick in mid-shaft but becomes quite thin near the joint surfaces at both ends of the bones. War surgery reports of wounding by the long, round nosed, first generation military FMJ bullets (to which the 6.5mm Mannlicher-Carcano belongs) showed that wounds near joints in the extremities with these bullets produced little disruption[3]. Given these undeniable facts it is difficult to understand the rationale behind the "conspiracy theorists" claim that the bullet that perforated Governor Connally's would have to have been deformed. Although logic alone should have sufficed to prove them wrong, our experimental results should put the last nail in the coffin of this fallacy.

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* *NOTE*: I advised Failure Analysis Associates to obtain a large trash can and fill it with mechanic's waste and rags for use as a bullet trap in this study (this worked well for Dr. Lattimer in catching the 6.5mm Mannlicher-Carcano bullets - see his article in this issue). Instead, they provided cardboard boxes containing dry sawdust. I was told that their CEO, who considers himself a ballistics expert, had told them to use the sawdust in cardboard boxes in lieu of the trash can of rags.

Sawdust has been used to catch bullets: Dr. FW Mann discusses it in his book, The Bullet's Flight (published in 1909 -- Wolfe Publishing Co. of Prescott, AZ, published a facsimile edition of this book in 1980) -- but he used oiled sawdust. I am unaware of any researcher who has reported using dry sawdust as a bullet trap. Oiled sawdust requires a considerably longer distance to stop bullets than does fabric: IWBA member Merrill Martin has a ten foot long oiled sawdust box in his shooting range in Emeryville, CA. Merrill has done a lot of experimentation with cast lead bullets and finds that his oiled sawdust provides the trap least likely to distort these bullets.

I hope this note saves future researchers the inconvenience caused in our study by losing two "good" hits (proper velocity was obtained and the right part of the radius bone was perforated) that passed through the sawdust boxes.

REFERENCES

[1] Lattimer JK. Lincoln and Kennedy -- Medical & Ballistic Comparison's of Their Assassinations. New York, Harcourt Brace Jovanovich, 1980. pp 142-366.

[2] Lattimer JK, Lattimer J, Lattimer G, et al. Wound Ballistics Rev 2(2):page #s, 1995. -- see Figs. 3, 22.

[3] La Garde L. Gunshot Injuries, 2nd Ed., New York, Wm. Wood & Co., 1916, p 319.